UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,761	03/29/2004	Jacob O. Wobbrock	DB001079-001	2816

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EXAMINER
REDDING, THOMAS M

ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/811,761	WOBBROCK ET AL.
	Examiner	**Art Unit**	
	Thomas M. Redding	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-53* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-53* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>29 March 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/29/2004*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Claim Objections

Claim Objections - 37 CFR 1.75(d)(1)

1.   The following is a quotation of 37 CFR 1.75(d)(1):

> The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

2.   Claims 8, 24 and 45 recites the limitation "said points correspond to center points" in line 1. There is insufficient antecedent basis for this limitation in the claim as the term "point" has not been previously used. From context it appears that the intent is to refer to the "two identical positions" described in claim 7. For the purpose of this examination, claims 8, 24 and 45 will be assumed to read as "said positions". Correction is required.

Claims 10, 26, and 47 make reference to a "library" which is not disclosed in the specification.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims 38-53 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 38, and by dependency, claims 29-53, defines a "memory carrying software" embodying functional descriptive material. However, the claim does not define a computer-readable medium or computer-readable memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). The examiner suggests amending the claims to embody the program on "computer-readable medium" or equivalent; assuming the specification does NOT define the computer readable medium as a "signal", "carrier

wave", or "transmission medium" which are deemed non-statutory. Any amendment to

the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1- 4, 9-13, 17-20, 25-29, 33,34, 37-41 and 46-50 are rejected under 35

U.S.C. 103(a) as being unpatentable over Sklarew (US 5, 297,216) and Bera (US 6,

754,387).

Regarding claim 1, Sklarew teaches [a] character recognition method ("The

embodiment also comprises a pattern recognition algorithm which allows the translation

of any written character or symbol, such as ideographs and scientific symbols, into

computer text", Sklarew, column 4, line 4), comprising: determining a sequence within a

guide ("Characterizing a Stroke reduces the sequence of coordinates defining the

Stroke or segment to a set of characteristics that are unique, generalized and minimal",

Sklarew, column 17, line 1 – determining a sequence, and "When the user wishes to

change a displayed character or symbol, he may simply write over the displayed

character or symbol and as described herein below the pattern recognition algorithm will

translate the written entry into computer text", Sklarew, column 10, line 29, the

displayed element is a guide for positioning the input); and identifying a character based

on said sequence (Sklarew, figure 5, reference 82 and 84).

Sklarew does not specifically teach using a sequence of corner hits and

identifying a symbol based on that sequence.

Bera, working in the same problem solving area of pattern recognition ("The

invention relates to a system, method and program product for pattern information

processing, more particularly in the context of pattern recognition", column 1, line 8),

does teach determining a sequence of corner hits within a guide ("Taking the corners of

the pattern in turn in order from a first of the corners through the last of the corners, a

first ordered sequence M of values representing the respective scalar distances

between each corner of the polygonal pattern and each other corner is formed", Bera,

column 1, line 34);

and identifying a symbol based on said sequence of corner hits ("Also, the invention

may comprise or be operable for comparing said converted values for said first pattern

with predetermined values representative of a selection of further patterns by way of a

computer coded string search command", Bera, column 2, line 17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the corner based pattern recognition method of Bera with the handwriting entry system of Sklarew "to provide a relatively simple means of deciding if two geometrical objects, each of polygonal shape, are similar, that is, they are geometrically identical except possibly for their size", Bera, column 1, line 23)

Regarding claim 17, the combination of Sklarew and Bera teach the elements that are common wit h claim 1. Sklarew also teaches determining a sequence of corner hits within a unistroke ("Characterizing a Stroke reduces the sequence of coordinates defining the Stroke or segment to a set of characteristics that are unique, generalized and minimal", Sklarew, column 17 line 1).

Regarding claim 33, the combination of Sklarew and Bera teaches [a] method of generating characters, comprising:

creating a stroke by striking a series of corners irrespective of the path between the comers ("Taking the corners of the pattern in turn in order from a first of the corners through the last of the corners, a first ordered sequence M of values representing the respective scalar distances between each corner of the polygonal pattern and each other corner is formed", Bera, column 1, line 34, Bera, isn't concerned with the path, only the actual positions of the corners); and

generating information indicative of the end of each stroke ("If the program determines
that the pen is up, then the Stroke is determined as having been completed and the
program branches to decision box 156", Sklarew, column 15, line 8, and figure 8A).

Regarding claim 38, the combination of Sklarew and Bera teaches the elements
that are common with claim 1. Sklarew also teaches memory carrying software which,
when executed, performs a method ("Microcomputer 14 has been programmed in
accordance with a computer program described herein below, to recognize the stream
of locating signals and to store these signals in a computer memory", Sklarew, column
5, line 67) comprising: determining a sequence of comer hits within a guide; and
identifying a character based on said sequence of comer hits.

Regarding claims 2, 18 and 39, the combination of Sklarew and Bera teaches
wherein each of said sequences of corner hits defines a single stroke ("If the program
determines that the pen is up, then the Stroke is determined as having been completed
and the program branches to decision box 156", Sklarew, column 15, line 8, and figure
8A), and wherein each single stroke is representative of one of a letter, number,
punctuation or mode ("if using the Roman alphabet, the twenty-six letters of the
alphabet and the numerals from 0 to 9 would be inserted into the database. Punctuation
symbols, such as periods, commas, question marks, colons, semi-colons, hyphens and
the like could also be inserted", column 11, line 34).

Regarding claims 3, 19, and 40, the combination of Sklarew and Bera teaches identifying a character as being upper case when said stroke representative of said character ends in a predetermined corner ("The computer will attempt to match the written numbers with the existing database (if any).", Sklarew, column 11, line 56, if the patterns matches an upper case pattern, the stroke would end on the final corner for the character pattern).

Regarding claims 4, 20, 34 and 41, the combination of Sklarew and Bera teaches detecting loss of contact with a touch sensitive surface, said loss of contact indicating the end of a stroke ("If the program determines that the pen is up, then the Stroke is determined as having been completed and the program branches to decision box 156", Sklarew, column 15, line 8, and figure 8A).

Regarding claims 9, 25, and 46, the combination of Sklarew and Bera teaches identifying a character is comprised of comparing the determined sequence of corner hits to data representative of a plurality of stored sequences of corner hits, selecting one of the stored sequences of corner hits based on said comparing, and outputting a character linked to said selected one of said stored sequences of corner hits (Sklarew, figure 5, reference 82 – comparing, reference 84 – selecting, and reference 86 – outputting).

Regarding claims 10, 26, 37, and 47, the combination of Sklarew and Bera teaches said comparing includes comparing the determined sequence of corner hits to a library of stored sequences of corner hits which is representational of a printed alphabet ("if using the Roman alphabet, the twenty-six letters of the alphabet and the numerals from 0 to 9 would be inserted into the database. Punctuation symbols, such as periods, commas, question marks, colons, semi-colons, hyphens and the like could also be inserted", column 11, line 34).

Regarding claims 11, 27 and 48, the combination of Sklarew and Bera teaches changing the stored sequences of corner hits that are linked to each character ("If it cannot be matched because there is no existing database or because there is a poor match with an existing database, the character is added to the database", Sklarew, column 11, line 57).

Regarding claims 12, 28, 49, the combination of Sklarew and Bera teaches changing includes providing one example of a sequence of comer hits and the character to which that sequence is to be linked ("In FIG. 10, one of a series of learning screens is displayed and the user is prompted to write the numbers 0 through 4. The computer will attempt to match the written numbers with the existing database (if any). If it cannot be matched because there is no existing database or because there is a poor match with an existing database, the character is added to the database. This learning process

continues until all of the alphanumeric (or other) characters and symbols to be used are

entered into the database", Sklarew, column 11, line 57)

Regarding claims 13, 29, and 50, the combination of Sklarew and Bera teaches

varying the size of the comers ("Ideally, the values in the first sequence are normalised

by dividing each value by the largest value in the sequence prior to normalization",

Bera, column 2, line 6, scaling the pattern will also scale the corners).

5.   Claims 5 - 8, 21-24, 35 and 42-45 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Sklarew (US 5, 297,216) and Bera (US 6, 754,387) in combination

with Wu et al. (US 2003/0006956).

Regarding claims 5, 21, 35 and 42, the combination of Sklarew and Bera teaches

the elements in common with the parent claims as given above.

The combination of Sklarew, Bera and Wu does not teach detecting the actuation

of a switch, said actuation indicating the end of a unistroke.

Wu, working in the same field of endeavor of character input does teach

detecting the actuation of a switch, said actuation indicating the end of a unistroke .

(Wu, figs 4, 5 and 6; and "The alternative input device has a joystick element 100",

paragraph 47 and "In one embodiment, the microswitch 150 is used as a pen-down

indicator. In this variation, a single input stroke is measured from pen-down to pen-up",

Wu, paragraph 53).

It would have been obvious at the time the invention was made for one of

ordinary skill in the art to use the joystick of Wu with the character recognition system of

Sklarew and Bera to provides a means of input in a small space where there is not

enough room for a suitable touchpad ("The tablet area does not permit use of the

method on very small devices such as small mobile telephones", Wu, paragraph 10). It

also avoids the need for a separate stylus which may get lost ("The stylus is an

inconvenient additional element, as it can be lost", Wu, paragraph 10) and using a

switch "has the advantage of disambiguating between pen-down and pen-up segments"

(Wu, paragraph 53) .

Regarding claims 6, 22 and 43, the combination of Sklarew and Bera teaches the

elements in common with the parent claims as given above.

The combination of Sklarew and Bera does not teach detecting lack of movement

of a joystick for a predetermined period of time, said lack of movement indicating the

end of a stroke.

Wu, working in the same field of endeavor of character input does teach

detecting lack of movement of a joystick for a predetermined period of time, said lack of

movement indicating the end of a stroke. (Wu, figs 4, 5 and 6; and "The alternative input

device has a joystick element 100", paragraph 47, and "A timer is started for each letter

entry. Preferably the timer begins with the first key-press of a new character. All strokes

entered before the time-out are considered as a single entry (character or numeral)",

Wu, paragraph 41).

Regarding claims 7, 23, 36 and 44, the combination of Sklarew, Bera and Wu

teaches detecting lack of movement includes detecting the joystick at two identical

positions within said predetermined period of time ("The joystick element 100 is

mounted on a spring-loaded mounting illustrated as a ball-and-socket mounting 101 by

way of example. The mounting is biased such that the joystick element returns to a

central resting position (not shown) when not under thumb or finger pressure", Wu,

paragraph 47, if the user releases the joystick, it will return to center for as many sample

periods occur before the timeout).

Regarding claims 8, 24, and 45 the combination of Sklarew, Bera and Wu

teaches wherein said points correspond to center points ("The joystick element 100 is

mounted on a spring-loaded mounting illustrated as a ball-and-socket mounting 101 by

way of example. The mounting is biased such that the joystick element returns to a

central resting position (not shown) when not under thumb or finger pressure", Wu,

paragraph 47, if the user releases the joystick, it will return to center for as many sample

periods occur before the timeout).

6.   Claims 14-16, 30-32 and 51-53 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Sklarew (US 5, 297,216) and Bera (US 6, 754,387) in combination

with Dimond (US 3,108,254).

        Regarding claim 14, 30 and 51, the combination of Sklarew and Bera teaches the

elements in common with the parent claims as given above.

        The combination of Sklarew and Bera does not teach varying the size includes

decreasing the size of only certain corners.

        Dimond, working in the same field of endeavor of written character recognition

does teach varying the size includes decreasing the size of only certain corners

(Dimond, figures 12 and 13, the corners on the left side are larger than the corners on

the right).

It would have been obvious at the time the invention was made for one of ordinary skill in the art to combine the handwriting guide and reader of Dimond with the character recognition system of Sklarew and Bera to have text that is "automatically and accurately readable by relatively simple reading means" (Dimond, column 3, line 23) and where "The constriction imposed upon the writer is nominal and accordingly does not interfere with his normal writing habits Considerable latitude is permissible in the hand writing of the characters while maintaining a high degree of accuracy from the automatic reading means (Dimond, column 3, line 29).

Regarding claims 15, 31 and 52, the combination of Sklarew, Bera and Dimond teaches varying the size includes decreasing the size of certain comers more than the size of other comers (Dimond, figures 12 and 13, the upper right corner is smaller than the other 3 corners).

Regarding claims 16, 32, 53, the combination of Sklarew, Bera, and Dimond teaches varying the shape of the comers (Dimond, figures 12 and 13, no two corners are the same shape).
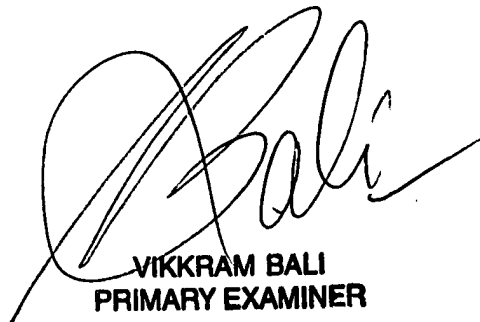
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas M. Redding whose telephone number is (571) 270-1579. The examiner can normally be reached on Mon - Fri 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TMR/

VIKKRAM BALI
PRIMARY EXAMINER